

## **Current State of Progress toward the Realization of “Challenge 2020 Vision”**

Tokyo Gas Co., Ltd.

Tokyo Gas Co., Ltd. (President: Mr. Tsuyoshi Okamoto, hereafter “Tokyo Gas”) announced last November its group’s mid-term management vision toward 2020, “Challenge 2020 Vision” (hereafter “Vision”), with a view to demonstrating the role and responsibility to make a contribution to the improvement of national standard of living and the economic development nationwide as a top runner in the field of natural gas, by increasing the value to customers and society at large, under the heightened expectation toward natural gas ever since the Great East Japan Earthquake. In the Vision, Tokyo Gas aims at enhancing the LNG value chain, which covers procurement and transportation of LNG, production and supply of city gas, and provision of energy solutions to a variety of customer needs regarding energy as a whole.

As for the main progress in raw materials procurement after almost a year has passed since the announcement, Tokyo Gas has been negotiating with the local project implementation body, Dominion Cove Point LNG, LP, of LNG procurement from Cove Point LNG Project, aiming to import LNG derived from U. S. natural gas, including shale gas, around 2017. In addition, Tokyo Gas is making an effort to diversify LNG sources, taking into account the supply stability, price competitiveness, and flexibility of procurement, by such initiatives as starting to receive LNG from Australian Pluto LNG Project in June 2012, and concluding a Memorandum of Agreement to renew the sale and purchase contract from Malaysia Dua LNG Project in August 2012. Besides, Tokyo Gas is developing overseas business by such initiatives as acquiring shares of a natural gas fired power station in Belgium, and signing Memorandum of Understanding for cooperation with Petrovietnam Gas.

As for upgrading the infrastructure of production and supply, Tokyo Gas will start such practical study as pipeline route examination, etc. of “Hitachi-Kashima Line (name TBD)” and begin to implement demand potential survey along the route of “Hitachi-Onahama Line (name TBD)”, etc. Also, Tokyo Gas has already started construction of “Ibaraki-Tochigi Line” in January 2012, signed a sale and purchase contract regarding the planned construction site of “Hitachi LNG Terminal” with the site owner, Ibaraki prefecture in June 2012, and started construction of the Terminal in July 2012, aiming at the commencement in FY2015. In order to enhance energy security, Tokyo Gas, together with both Shizuoka Gas Co., Ltd. and INPEX CORPORATION, has reached an agreement in June 2012 to back up supply of natural gas reciprocally through the existing pipelines already connected one another, in case gas supply could be terminated.

As for energy solutions, with the target in the Vision to expand its power generation capacity to 3 to 5 million kW by 2020 including interests of other companies, Tokyo Gas, as a part of this initiative, made a decision in October 2012 on the construction of Ohgishima Power Station Unit 3 to be commenced in FY2015. Then, Tokyo Gas is also spreading and expanding distributed energy systems steadily, with the estimate that annual sales targets of FY2012 for residential fuel cell systems called “Ene-Farm”, cogeneration systems and gas fueled air-conditioning systems are to be achieved respectively.

Tokyo Gas is determined to make an effort for the further enhancement of LNG value chain, continuously aiming at the realization of “Challenge 2020 Vision”

Reference: Current State of Progress of main themes in “Challenge 2020 Vision”

\*Underlined part means what was newly achieved after April 2012.

<p>Overseas Business Resource Procurement</p>	<p>(1) Initiatives to diversify LNG sources</p> <ul style="list-style-type: none"> <li>① <u>Examination regarding procurement from U.S. Cove Point LNG Project(Spring 2012~)</u> Negotiation in progress with Dominion Cove Point LNG, LP, conjointly with Sumitomo Corporation, aiming at importing LNG derived from U.S. natural gas, including shale gas.</li> <li>② <u>Receipt of LNG from Pluto LNG Project (June, 2012)</u> Contract term: FY2012-FY2024, Volume: 1.5 – 1.75 million ton/year</li> <li>③ <u>Signing of a Memorandum of Agreement to renew LNG sales and purchase contract with Malaysia LNG Sdn. Bhd. (August, 2012)</u> Contract term: 10 years from FY2015, Volume: 0.9 million ton/year</li> <li>④ Signing of a contract regarding sale and purchase of LNG from Ichthys LNG Project (December, 2011) and resolution to participate in the project (January, 2012) Contract term: 15 years from 2017, Volume: 1.05 million ton/year, Upstream equity: 1.575%</li> <li>⑤ Conclusion of heads of agreement regarding the extension of LNG sale and purchase contract from Brunei LNG Project (March, 2012) Contract term: 10 years from FY2013, Volume: 1 million ton/year, Other buyers: The Tokyo Electric Power Co., Inc., Osaka Gas Co., Ltd.</li> </ul> <p>(2) Development of overseas business</p> <ul style="list-style-type: none"> <li>① <u>Acquisition of shares of a natural-gas-fired power station in Belgium (June, 2012)</u> Acquisition of 26.66% shares of the operating company by means of share transfer</li> <li>② Conclusion of a Memorandum of Understanding for cooperation with Petrovietnam Gas (March, 2012) With the FEED (Front End Engineering and Design) contract of the first LNG receiving terminal in Vietnam, Tokyo Gas signed a Memorandum of Understanding regarding the establishment of LNG value chain in Vietnam.</li> <li>③ Implementation of feasibility study regarding the power and thermal supply infrastructure installment in the redevelopment plan in Thailand (February, 2012)</li> </ul>
<p>Production Supply</p>	<p>(1) <u>Development of infrastructure construction centered upon Ibaraki prefecture region</u></p> <ul style="list-style-type: none"> <li>① Hitachi-Kashima Line (name TBD), Hitachi-Onahama Line (name TBD) Commencement of practical study such as pipeline route examination of Hitachi -Kashima Line (name TBD), and of demand potential survey along the route of Hitachi-Onahama Line (name TBD), including Hitachi branch area.</li> <li>② Kashima Waterfront Line After completion, gas supply started to Tepco Kashima thermal power plant in June 2012.</li> </ul> <p>(2) <u>Commencement of construction work of “Hitachi LNG Terminal” (July, 2012)</u> With the commencement target of FY2015, trunk line construction has been started in January, 2012. The sale and purchase contract regarding the planned construction site was concluded with the site owner, Ibaraki prefecture, and construction work for Hitachi LNG Terminal has already been commenced.</p> <p>(3) Conclusion of reciprocal backup supply contract of natural gas in case of an emergency (June, 2012) Agreed with Shizuoka Gas Co., Ltd. and INPEX CORPORATION on reciprocal backup supply of natural gas through the pipeline network already connected one another, when natural gas supply could be terminated.</p> <p>(4) Promotion of trunk line construction</p> <ul style="list-style-type: none"> <li>① Saito Line: Construction work started to be completed in FY2015.</li> <li>② Koga-Moka Line: Listed on our supply plan in FY2012 to be completed in FY2017.</li> <li>③ Chiba-Kashima Line: Completed in March 2012</li> </ul> <p>(5) Provision for the natural disasters and security countermeasures</p> <ul style="list-style-type: none"> <li>① Reorganization of 140 disaster-prevention blocks into 162 ones carried out in July 2012, with an aim to prevent secondary disaster caused by the earthquake, and to restore gas supply as soon as possible. The total number of disaster prevention blocks will be increased to 200 eventually by around 2018.</li> <li>② Water-proof work underway on electricity control rooms in LNG terminals in case of urban-type flooding, with the reinforcement of countermeasures for earthquake and Tsunami.</li> <li>③ Accelerated initiatives underway for aging facilities such as aging cast-iron pipes.</li> </ul>

Energy Solution	<p>(1) <u>Construction determined on Ohgishima Power Station Unit 3 (October, 2012)</u>  Construction determined on Ohgishima Power Station Unit 3, already undergone environmental assessment and capable of making prompt contribution for the realization of stable and efficient power supply. Ground-breaking is scheduled in November 2012, and so is commencement in FY2015. Maximum efficiency is to be approximately 58% and total generation capacity is to be approximately 407,000 kW.</p> <p>(2) Spread and Promotion of distributed energy systems and gas-fueled air conditioning systems, contributing for the electricity peak-cut, energy conservation and CO2 emission reduction</p> <p>① <u>Ene-Farm: Annual target of 7,100 units is expected to be achieved</u>, reflecting the customer demand for distributed energy system and energy conservation initiatives, with the aid of national budget for emergency economic measures.</p> <p>② <u>Cogeneration systems: Annual target of 150,000kW is expected to be achieved</u>, by making a full use of various kinds of subsidies, reflecting the demand for energy-security and BCP.</p> <p>③ <u>Gas fueled air-conditioning systems: Annual target of 100,000 RT including 7,000 units of GHP is to be achieved</u>, with the commercialization of GHP named “Excel Plus”, which is equipped with the self-sustaining function in case of blackouts, dealing with the demand for electricity conservation.</p> <p>(3) Nationwide operation for LNG supply</p> <p>① <u>In October 2012, LNG supply started for Ishikari LNG Terminal of Hokkaido Gas Co., Ltd., which is to be commenced in December, 2012. Contract term is 11 years from FY2012, and annual contract volume is approximately 300 - 400 thousand ton per year with approximately 90 thousand ton in FY2012. Moreover, investment was made on Hokkaido LNG Co., Ltd., the owner company of Ishikari LNG Terminal in October 2012, with the equity ratio of 20% for Tokyo Gas.</u></p> <p>② Conclusion of LNG sale and purchase contract with Saibu Gas  Contract term: 16 years from FY2014, Volume: Approx. 300 thousand ton/year</p> <p>(4) Demand development with the commencement of Chiba-Kashima Line  Demand development forecast in FY2012: Approx. 0.3 billion m3</p> <p>(5) Promotion of smart energy systems</p> <p>① <u>Installation determined in October 2012 of newly developed cogeneration control system called “Gene-Smart”, to draw maximum capability of electricity supply of cogeneration systems in case of blackouts, to the large-sized complex facility, “Tokyo East 21”, to promote smart-energy network</u></p> <p>② <u>In “Fujisawa Sustainable Town” which is operated mainly by Panasonic Corporation, both installation of recent type of “Ene-Farm” and cogeneration system and area energy network initiatives have been promoted.</u></p> <p>③ <u>Demonstration test of smart energy network in Senju branch (Arakawa ward, Tokyo-to) has recorded 13.6% of energy conservation rate and 35.8% of CO2 emissions reduction rate in FY2011.</u></p> <p>④ Demonstration test underway of condominium-type smart houses at Isogo company house in Isogo ward, Yokohama city, Kanagawa prefecture since March 2012.</p> <p>⑤ Partly commencement in April 2012 of construction work of smart energy network in the northern area of east exit of Tamachi Station (The first project of smart energy network in urban development area in Japan)</p> <p>(6) Reinforcement of support for 42 Lifeval companies</p> <ul style="list-style-type: none"> <li>• Promotion of the establishment of community-based marketing schemes, strengthening the ties with customers, utilizing all the business opportunities to encounter customers</li> <li>• <u>Commencement of operations of service business management system to support the provision of carefully tuned values and services to deal with customers’ needs.</u></li> </ul>
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